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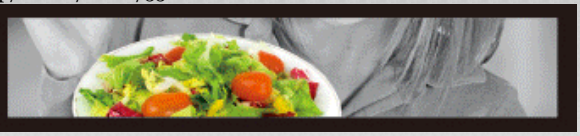

Connectivity

by nickland @ Friday, 27 May 2011 15:07

Two unusual little girls test the limits of identity

At the leading-edge of information technology -- and amongst the 'transhumanist' commentary it stimulates – the idea of self-identity is undergoing relentless interrogation. Cultures substantially influenced by Abrahamic religious traditions, in which the resilient integrity and fundamental individuality of the 'soul' is strongly emphasized, are especially vulnerable to the prospect of radical and disconcerting conceptual revision.

The computerization of the natural sciences – including neurosciences – ensures that the investigation of the human brain and the innovation of artificial intelligence systems advance in parallel, whilst cross-linking and mutually reinforcing each other. Increasingly, the understanding of the brain and its digital emulation tend to fuse into a single, complex research program. As this program emerges, archaic metaphysics and spiritual doctrines become engineering problems. Individual identity seems ever less like a basic property, and more like a precarious achievement – or challenge – determined by processes of self-reference, and by relative communicative isolation. ('Split-brain' cases have vividly illustrated the instability and artificiality of the self-identifying individual.)

Would an AI program – or brain – that was tightly coupled to the Internet by high-bandwidth connections still consider itself to be strictly individuated? Do cyborgs – or uploads -- dissolve their souls? Could a networked robot say 'I' and mean it? Because such questions are becoming ever more prominent, and practical, it is not surprising that a New York Times story by Susan Dominus, devoted to craniopagus conjoined twins Krista and Tatiana Hogan, has generated an unusual quantity of excitement and Internet-linkage.

The twins are not only fused at the head (craniopagus), their brains are connected by a 'neural bridge' that enables signals from one to the other. Neurosurgeon Douglas Cochrane proposes "that visual input comes in through the retinas of one girl, reaches her thalamus, then takes two different courses, like electricity traveling along a wire that splits in two. In the girl who is looking at the strobe or a stuffed animal in her crib, the visual input continues on its usual pathways, one of which ends up in the visual cortex. In the case of the other girl, the visual stimulus would reach her thalamus via the thalamic bridge, and then travel up her own visual neural circuitry, ending up in the sophisticated processing centers of her own visual cortex. Now she has seen it, probably milliseconds after her sister has."

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The twins' brains, or a twin-brain? The Hogan case is so extraordinary that irreducible ambiguity

The girls' brains are so unusually formed that doctors could not predict what their development w unusually short corpus callosum, the neural band that allows the brain's two cerebral hemispher each girl, the two cerebral hemispheres also differ in size, with Tatiana's left sphere and Krista's than is typical. "The asymmetry raises intriguing questions about whether one can compensate fo brain bridge," said Partha Mitra, a neuroscientist at Cold Spring Harbor Laboratory, who studies cognition may also be facing specific challenges that no others have experienced: some kind of co require additional energy to filter and process. In addition to sorting out the usual sensory experi brains, their doctors believe, have been forced to adapt to sensations originating with the organs else. ... Krista likes ketchup, and Tatiana does not, something the family discovered when Tatiana off her own tongue, even when she was not eating it.

As they struggle to make sense of their boundaries, the twins are avatars of an impending, univer

Although each girl often used "I" when she spoke, I never heard either say "we," for all their collab seemed confused by how to think of themselves, with the right language perhaps eluding them at under these unusual circumstances — or maybe not existing at all. "It's like they are one and two Feinberg, the professor of psychiatry and neurology at Albert Einstein College of Medicine. What p

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